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EXAMINER

VAN OUDENAREN, SARAH A

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 43-45 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shimizu et al (US 5,228,932).

Shimizu teaches a Fe-Cr-Al alloy having excellent oxidation resistance. The alloy comprises 1-10 wt% Al (col 8, lines 62-63), 10-28 wt% Cr (col 8, line 40), 0.5 wt% or less Si (col 9, lines 14-15). Shimizu also teaches the alloy comprising less than 0.5 wt% Y, less than 0.3 wt% Hf (col 9, lines 45-50), 0.01-1 wt% Zr (col 3, lines 60-61). Shimizu teaches the alloy being used as a catalytic substrate foil for an exhaust gas purifying catalytic converter (col 2, lines 35-45). It is noted that the limitations of the claim recite only a maximum and therefore it is assumed that the minimum can be zero, so all elements are not needed to meet the limitations of the claim. Shimizu teaches a thickness of 50µm (col 3, line 20).

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In the alternative, Shimizu and the claims differ in that Shimizu does not teach the exact same proportions as recited in the instant claims. As Shimizu anticipates or alternatively renders obvious the alloy as discussed above it would be expected to display a substantially similar linear deformation when measured under the instantly claimed conditions.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Shimizu overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Regarding claims 44-45 and 47, the above ranges overlap those of the instant claims. And in the alternative, Shimizu and the claims differ in that Shimizu does not teach the exact same proportions as recited in the instant claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Shimizu overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

### ***Claim Rejections - 35 USC § 103***

Claims 48-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al (US 5,228,932) as applied to claims 43-45 above, and further in view of Aggen et al (US 4,414,023).

Shimizu teaches a Fe-Cr-Al alloy having excellent oxidation resistance as discussed above.

Shimizu does not explicitly teach a method for making the foil.

Aggen teaches a ferritic stainless steel alloy comprising 3-8 wt% Al, 8-25 wt% Cr, 0-4 wt% Si (col 3, lines 15-25). Tables I and II (col 9-10 and 11-14) teach the addition of

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a stabilizer in the range of 0.003-0.37 wt% Zr. Aggen teaches preparing a melt of the alloy and casting the melt into ingots, bars, strips, or sheets. It can then be hot and/or cold rolled (col 7, lines 40-55). Aggen also teaches annealing at various points throughout the preparation (col 8, lines 35-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the method of Aggen with the alloy foil of Shimizu as they are similar products and it would have therefore been obvious to utilize a similar method of making.

Regarding claim 49, Shimizu teaches a Fe-Cr-Al alloy having excellent oxidation resistance as discussed above. Shimizu teaches the alloy being used as a catalytic substrate for an exhaust gas purifying catalytic converter used in automobiles (col 1, lines 9-17). Shimizu does not explicitly teach the component being used in a diesel or two-stroke engine. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the alloy and component of Shimizu in an engine, such as diesel and two-stroke engines, which utilizes catalytic converters.

Regarding claim 50, Shimizu teaches the alloy being used as a catalytic substrate foil for an exhaust gas purifying catalytic converter (col 2, lines 35-45).

Regarding claim 51, Aggen teaches the alloy being used for electrical resisting heating elements (col 6, lines 30-40). The limitation of "for electrical preheating of exhaust cleaning systems" is considered intended use.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the product of Shimizu for the use of Aggen insofar as the products of

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Shimizu and Aggen are similar and would therefore have the ability to be used in a similar manner.

### ***Response to Arguments***

Applicant's arguments filed 9/17/2009 have been fully considered but they are not persuasive.

The 112 2<sup>nd</sup> paragraph rejections previously of record have been sufficiently overcome by the amendments set forth by applicant. The currently pending claims are 43-45 and 47-51.

Applicant argues that Shimizu teaches a broader range than that of the instant claims, however this does not overcome the rejection as the ranges do in fact overlap and/or fully encompass the ranges of the instant claims. Applicant also argues that Shimizu does not teach P and S within the composition, however as noted in the rejections of record, the claim language regarding P and S only requires an upper limit and therefore the lower limit is considered to be zero and as such is not required to meet the limitations of the claim. Applicant seems to be arguing unexpected results regarding the creep resistance however such a property is not reflected in the claim language. Regarding the linear deformation, as discussed above, the alloy of Shimizu is substantially similar or anticipatory and would therefore be expected to have similar linear deformation when tested under the instantly claimed conditions. Applicant has not shown how the alloy of Shimizu would differ from the instantly claimed alloy when the alloy is within overlapping ranges.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARAH VAN OUDENAREN whose telephone number is (571)270-5838. The examiner can normally be reached on Monday-Thursday, 9:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin Curtis Mayes can be reached on 571-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SARAH VAN OUDENAREN/  
Examiner, Art Unit 1793  
December 14, 2009

/Melvin Curtis Mayes/  
Supervisory Patent Examiner, Art Unit 1793



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